

L Number	Hits	Search Text	DB	Time stamp
3	2	("5937391").PN.	USPAT; US-PGPUB; EPO; JPO; DERWENT; IBM_TDB	2004/01/13 17:13
4	2	("5117355"   "5774870").PN.	USPAT	2004/01/13 17:03
5	1105	help near2 desk	USPAT; US-PGPUB; EPO; JPO; DERWENT; IBM_TDB	2004/01/13 17:45
6	23	(US-6662210-\$ or US-5220657-\$ or US-5706507-\$ or US-5623655-\$ or US-5913061-\$ or US-6094688-\$ or US-6334141-\$ or US-6336134-\$ or US-5761420-\$ or US-5781732-\$ or US-6473760-\$ or US-5537526-\$ or US-5446842-\$ or US-6622147-\$ or US-6567844-\$ or US-6453328-\$ or US-5867494-\$ or US-6378001-\$ or US-5966386-\$).did. or (US-20010025299-\$ or US-20020152271-\$ or US-20010016873-\$ or US-20030037111-\$).did.	USPAT; US-PGPUB	2004/01/13 17:14
7	1	(help near2 desk) and ((US-6662210-\$ or US-5220657-\$ or US-5706507-\$ or US-5623655-\$ or US-5913061-\$ or US-6094688-\$ or US-6334141-\$ or US-6336134-\$ or US-5761420-\$ or US-5781732-\$ or US-6473760-\$ or US-5537526-\$ or US-5446842-\$ or US-6622147-\$ or US-6567844-\$ or US-6453328-\$ or US-5867494-\$ or US-6378001-\$ or US-5966386-\$).did. or (US-20010025299-\$ or US-20020152271-\$ or US-20010016873-\$ or US-20030037111-\$).did.)	USPAT; US-PGPUB; EPO; JPO; DERWENT; IBM_TDB	2004/01/13 17:14
8	207	(help near2 desk) and collaboration	USPAT; US-PGPUB; EPO; JPO; DERWENT; IBM_TDB	2004/01/13 17:29
9	74	((help near2 desk) and collaboration) and @ad <= "20010117"	USPAT; US-PGPUB; EPO; JPO; DERWENT; IBM_TDB	2004/01/13 17:15
10	20	(help near2 desk).ttl.	USPAT; US-PGPUB; EPO; JPO; DERWENT; IBM_TDB	2004/01/13 17:42
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12	8504	help with computer	USPAT; US-PGPUB; EPO; JPO; DERWENT; IBM_TDB	2004/01/13 17:45
13	158	help with computer with internet	USPAT; US-PGPUB; EPO; JPO; DERWENT; IBM_TDB	2004/01/13 17:46
14	11	help with computer with internet with desk	USPAT; US-PGPUB; EPO; JPO; DERWENT; IBM_TDB	2004/01/13 17:50

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16	7	help with merchant with desk	USPAT; US-PGPUB; EPO; JPO; DERWENT; IBM_TDB	2004/01/13 17:51
17	97	help with (merchant or business or shop or store) with desk	USPAT; US-PGPUB; EPO; JPO; DERWENT; IBM_TDB	2004/01/13 17:51
-	12287	(709/104,201,204,205,217,219,225,227,229,232,246,250).CCLS.	USPAT; US-PGPUB; EPO; JPO; DERWENT; IBM_TDB	2004/01/09 09:51
-	7582	((709/104,201,204,205,217,219,225,227,229,232,246,250).CCLS.) and @ad <=20010117	USPAT; US-PGPUB; EPO; JPO; DERWENT; IBM_TDB	2004/01/09 10:17
-	103316	(distribut\$4 or shar\$4) with (documents or images)	USPAT; US-PGPUB; EPO; JPO; DERWENT; IBM_TDB	2004/01/09 09:54
-	748	((709/104,201,204,205,217,219,225,227,229,232,246,250).CCLS.) and @ad <=20010117 ) and ((distribut\$4 or shar\$4) with (documents or images))	USPAT; US-PGPUB; EPO; JPO; DERWENT; IBM_TDB	2004/01/09 09:53
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-	634	((709/104,201,204,205,217,219,225,227,229,232,246,250).CCLS.) and @ad <=20010117 ) and ((distributed or distributing or shar\$4) with (documents or images))	USPAT; US-PGPUB; EPO; JPO; DERWENT; IBM_TDB	2004/01/09 09:55
-	28195	(distributed or distributing or shared or sharing) with (documents or images)	USPAT; US-PGPUB; EPO; JPO; DERWENT; IBM_TDB	2004/01/09 09:54
-	590	((709/104,201,204,205,217,219,225,227,229,232,246,250).CCLS.) and @ad <=20010117 ) and ((distributed or distributing or shared or sharing) with (documents or images))	USPAT; US-PGPUB; EPO; JPO; DERWENT; IBM_TDB	2004/01/09 09:55
-	133	((709/104,201,204,205,217,219,225,227,229,232,246,250).CCLS.) and @ad <=20010117 ) and ((distributed or distributing or shared or sharing) with (documents or images))) and collaboration	USPAT; US-PGPUB; EPO; JPO; DERWENT; IBM_TDB	2004/01/09 10:17
-	6563	(707/2,8,9,10,201,205).CCLS.	USPAT; US-PGPUB; EPO; JPO; DERWENT; IBM_TDB	2004/01/09 10:16

-	5325	((707/2,8,9,10,201,205).CCLS.) and @ad <=20010117	USPAT; US-PGPUB; EPO; JPO; DERWENT; IBM_TDB	2004/01/09 10:17
-	299	((((707/2,8,9,10,201,205).CCLS.) and @ad <=20010117 ) and collaborat\$4	USPAT; US-PGPUB; EPO; JPO; DERWENT; IBM_TDB	2004/01/09 10:17
-	23	collaboration with queue	USPAT; US-PGPUB; EPO; JPO; DERWENT; IBM_TDB	2004/01/12 10:19
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-	58	(document with collaboration) and queue	USPAT; US-PGPUB; EPO; JPO; DERWENT; IBM_TDB	2004/01/12 11:36
-	1	5761420.URPN.	USPAT	2004/01/12 11:27
-	6	("5547178"   "5563999"   "5709374"   "5793964"   "5844554"   "6224048").PN.	USPAT	2004/01/12 11:29
-	0	6473760.URPN.	USPAT	2004/01/12 11:31
-	1	"5537526".PN.	USPAT	2004/01/12 11:31
-	3	((single near2 document) with collaboration)	USPAT; US-PGPUB; EPO; JPO; DERWENT; IBM_TDB	2004/01/12 13:17
-	1	command-based-collaboration	USPAT; US-PGPUB; EPO; JPO; DERWENT; IBM_TDB	2004/01/12 13:17
-	5	command near2 based near2 collaboration	USPAT; US-PGPUB; EPO; JPO; DERWENT; IBM_TDB	2004/01/12 13:18
-	6	(command near2 based) with collaboration	USPAT; US-PGPUB; EPO; JPO; DERWENT; IBM_TDB	2004/01/12 13:19
-	28	queue\$2 with collaboration	USPAT; US-PGPUB; EPO; JPO; DERWENT; IBM_TDB	2004/01/12 13:20
-	6	(queue\$2 same collaboration) and (single near2 document)	USPAT; US-PGPUB; EPO; JPO; DERWENT; IBM_TDB	2004/01/12 13:49
-	293	queue\$2 and collaboration and document and simultaneous	USPAT; US-PGPUB; EPO; JPO; DERWENT; IBM_TDB	2004/01/12 13:51

-	119	(queue\$2 and collaboration and document and simultaneous) and @ad <=20010117	USPAT; US-PGPUB; EPO; JPO; DERWENT; IBM_TDB	2004/01/12 14:35
-	77	((command near2 based) and collaboration) and @ad <=20010117	USPAT; US-PGPUB; EPO; JPO; DERWENT; IBM_TDB	2004/01/12 14:38
-	2	((command adj2 based) same collaboration) and @ad <=20010117	USPAT; US-PGPUB; EPO; JPO; DERWENT; IBM_TDB	2004/01/12 14:36
-	356	taligent	USPAT; US-PGPUB; EPO; JPO; DERWENT; IBM_TDB	2004/01/12 15:01
-	0	(taligent\$4).an.	USPAT; US-PGPUB; EPO; JPO; DERWENT; IBM_TDB	2004/01/12 14:40
-	1	"5280583".PN.	USPAT	2004/01/12 14:41
-	76	5446842.URPN.	USPAT	2004/01/12 14:41
-	285	synchronization adj server	USPAT; US-PGPUB; EPO; JPO; DERWENT; IBM_TDB	2004/01/12 15:01
-	38	(synchronization adj server) and collaboration	USPAT; US-PGPUB; EPO; JPO; DERWENT; IBM_TDB	2004/01/13 14:44
-	15	5365835.URPN.	USPAT	2004/01/12 15:11
-	338	(computer adj supported adj cooperative adj work) or cscw!	USPAT; US-PGPUB; EPO; JPO; DERWENT; IBM_TDB	2004/01/13 14:45
-	28017	shopping	USPAT; US-PGPUB; EPO; JPO; DERWENT; IBM_TDB	2004/01/13 16:13
-	3745	shopping with internet	USPAT; US-PGPUB; EPO; JPO; DERWENT; IBM_TDB	2004/01/13 16:14
-	45	(shopping with internet) and collaboration	USPAT; US-PGPUB; EPO; JPO; DERWENT; IBM_TDB	2004/01/13 17:02

## Structured and Distributed Cooperative Editing in a Large Scale Network (Make Corrections)

Dominique Decouchant, Vincent Quint, Manuel Romero  
Salcedo

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**Abstract:** : In this chapter we discuss the advantages of a structured model of documents in a cooperative editor. The discussion is based on the experience gained in developing and using Alliance, a groupware application that allows several users distributed on a network to cooperate for producing documents in a structured way. In addition to the local editing functions made available on each site by a structured editor, the application provides such basic functionalities as management of document... [\(Update\)](#)

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0.2: Griffon: A Cooperative, Structured, Distributed.. - Decouchant, Quint.. [\(Correct\)](#)

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- 10 A Case Study Of CES: A Distributed Collaborative Editing Sys.. (context) - Greif, Seliger et al. - 1992
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Structured and Distributed Cooperative Editing in a.. - Decouchant, Quint.. (Correct)

....problem is then to choose the right size of these entities. **Some** projects such as Quilt [12] 22] and CES [15] propose a very restrictive and static notion of a shared entity. In an article, only sections can constitute sharing entities. **The drawbacks of that notion have been considered by Mace [27], which allows users to dynamically split the document without any constraint: a document is simply a sequence of characters and any substring can constitute an entity.** CES and Mjlnr [24] consider a simple structure that divides a document into sections and sections into textual units, which can ....

R. E. Newman-Wolfe and Harsha K. Pelimuhandiram, ***MACE: A Fine Grained Concurrent Editor***, Proceedings of the Conference on Organizational Computing Systems, pp. 240-254, ACM Press , November 1991.

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Design Issues and Model for a Distributed Multi-User Editor - Koch (1996) (5 citations) (Correct)

....are called group editors #Ellis et al. 1991#. Many tools have already been proposed to support collaborative writing for di#erent media #text, graphic, structured documents, outlines#. **There are tools to support synchronous editing #e.g. GROVE #Ellis and Gibbs, 1989; Ellis et al. 1990#, MACE #Newman Wolfe and Pelimuhandiram, 1991#, SASE and SASSE #Baecker et al. 1993#, CaveDraw #Lu and Mantei, 1991#, GroupDesign #BeaudouinLafon and Karsenty, 1992#, GroupDraw #Greenberg et al. 1992## and to support asynchronous editing #e.g. CES #Greif et al. 1986#, Quilt #Fish et al. 1988; 16#02#1996 Design Issues and Model for a ....**

Newman-Wolfe, R. E. and Pelimuhandiram, H. K. #1991#: ***MACE: A Fine Grained Concurrent Editor***. Proceedings of ACM SIGOIS Conference on Organizational Computing Systems #Atlanta, GA#, 1991, SIGOIS. ACM Press, New York, NY. pp. 240#254.

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Floor Control in Synchronous Groupware - Boyd, Jr. (Correct)

.... **Rapport [Ahuja et al. 1988] Xsketch [Lee, 1990] Commune [Bly and Minneman, 1990] GROVE [Ellis et al. 1991] rIBIS [Rein and Ellis, 1991] MMM [Bier and Freeman, 1991] GroupSketch and GroupDraw [Greenberg et al. 1992] SEPIA [Haake and Haake, 1993, Haake and Wilson, 1992] and Ensemble [Newman Wolfe and Pelimuhandiram, 1991].** Within these, there are a variety of possibilities for how telepointers might be displayed and used. **Several** systems use telepointers that are simply large arrows, e.g. Colab, and MMConf, while a few use cursors that are accompanied by the name of the user with which the cursor is associated, ....

....variation on the optimistic assumption. **With** the exception of GROVE [Ellis and Gibbs, 1989, Ellis et al. 1991] most collaborative text editing systems have used some form of locking for concurrency control. **ShrEdit [Dourish and Bellotti, 1992, Olson et al. 1990, Olson et al. 1992] MACE [Newman Wolfe and Pelimuhandiram, 1991] and Ensemble [Newman Wolfe et al. 1992] and SASSE [Baecker et al. 1993] all do locking of text selections, in some cases using multiple locks, e.g. a pair of locks to delineate the range of text selected for further processing [Newman Wolfe and Pelimuhandiram, 1991] GroupKit [Greenberg and ....**

[Article contains additional citation context not shown here]

Newman-Wolfe, R. and Pelimuhandiram, H. K. (1991). ***MACE: A Fine Grained Concurrent Editor***. In De Jong, P., editor, Conference on Organizational Computing Systems, pages 240--254, Atlanta, Georgia. ACM, IEEE.

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Real Time Groupware as a Distributed System: Concurrency.. - Greenberg, Marwood (1994) (68 citations) (Correct)

....must be treated differently because it includes not only computers but people as well. The groupware class we are addressing is those supporting highly interactive real time shared computational workspaces. **Examples are group sketchpads [10,30] drawing tools [11,20] and group word processors [2,19].** We expect that participants in these conferences: are in real time communication with each other e.g. through audio and video channels; focus and coordinate their attentions on what seems to be a shared visual workspace or document e.g. what you see is what I see [26] are aware of ....

....CONCURRENCY CONFLICTS Management of conflicts due to concurrency is a wellresearched topic in distributed databases and parallel simulation [5,7] However, the application of concurrency control to the nuances of groupware is often neglected. **While groupware researchers point to its importance [6,12,14,15,19,23], application developers typically ignore it outright, or consider concurrency control to be an issue to be remedied by some textbook approach.** To set the scene, this section will review what is meant by concurrency control, and will present typical remedies to concurrency conflicts used in the ....

[Article contains additional citation context not shown here]

Newman-Wolfe, R. E. and Pelimuhandiram, H. K. (1991) "**MACE: A Fine Grained Concurrent Editor.**" In Proceedings of the ACM COCS Conference on Organizational Computing Systems, pp. 240-254.

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Application of Collaborative Editing to Software-Engineering.. - Borghoff, Teege (1993) (5 citations) (Correct)

....to take a turn at editing the file. All other users, the so-called observers, are able to watch the master's edit in real time. **MMM [1] supports simultaneous real time collaboration with fine grained sharing. This includes simultaneous access to the same text string or graphical object [2] MACE [22] supports variable editable granularity, i.e. a user acquires a pair of locks for the text fragment in question.** Together, the top and bottom locks mark an area of text that can be updated without interference from others as soon as the locks are held by a centralized editor server. **Other ....**

Newman-Wolfe, R.E., Pelimuhandiram, H.K.: **MACE: A Fine Grained Concurrent Editor.** Proc. ACM SIGOIS Conf. on Organizational Computing Systems, Atlanta, GA, 1991. New York: SIGOIS ACM, pp. 240--254

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Optional Locking Integrated with Operational Transformation in.. - Sun, Sasic (1999) (Correct)

.... **[3, 4, 11, 14, 15, 16] Locking is a standard technique in traditional distributed computing and database systems to ensure data integrity by prohibiting concurrent conflicting updates on shared data objects [1] Locking has also been applied in various group editors for consistency maintenance [2, 5, 6, 7, 8, 9, 10].** A common misconception about locking and operational transformation, however, is that they are regarded as two competing techniques for resolving the same types of inconsistency problems. **Our research in consistency maintenance has led us to realize that locking and operational transformation ....**

....generated directly from the user interface if the user wants to protect a string to be inserted at a particular position in the document. **VI. COMPARISON TO RELATED WORK A variety of locking schemes have been proposed to maintain consistency in group text editors, such as the MACE locking scheme [9], the SHREDIT locking scheme [7] the SASSE locking scheme [2] and the DISTEDIT locking scheme [6] A sophisticated locking scheme with multiple granularity and compatibility modes is proposed in [8] Locking in all existing systems are compulsory because locking was believed to be able to ....**

R.E. Newman-Wolfe, et al: "**MACE: a fine grained concurrent editor,**" In Proc. of the ACM COCS Conference on Organizational Computing Systems, pp.240-254.

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The Collaborative Multi-User Editor Project IRIS - Koch (1995) (2 citations) (Correct)

....SASE and SASSE [Baec93] CAVEDRAW [Lu91] GROUPDESIGN [Beaud92] and GROUPDRAW [Green92] Most of these tools are limited to LAN environments. **If wide area network support is provided this is done by pessimistic locking protocols and by some form of central control or central storage (e.g. MACE [Newma91]) Hence, it is not possible to access the document if the network is down.** According to Beck, who has studied co authoring in academia, these tools (especially the synchronous ones) are not used by writing teams [Beck93b] As the main reason for this many surveys (e.g. Grudi90, Tatar91) ....

R. E. Newman-Wolfe and H. K. Pelimuhandiram. **MACE: A Fine Grained Concurrent Editor.** Proceedings of ACM



SIGOIS Conference on Organizational Computing Systems (Atlanta, GA), SIGOIS, pages 240--254. ACM Press, New York, NY, 1991.

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Issues in the Design of a Toolkit for Supporting Multiple.. - Knister, Prakash (1993) (10 citations) (Correct)

....are lacking in the other group editors; they only allow users to undo the globally last editing actions, but not just their own actions. **DistEdit** specifically addresses the problem of per user undo in group editors, making the facility available to all editors built using the toolkit. **MACE [15], another group editor, is structured to make it easy to integrate different editors into a collaborative environment by replacing only a few modules.** At present, however, only one editor interface, based on the Athena text widget, is supported. **We** believe that the following design decisions in ....

....widget, is supported. **We believe that the following design decisions in MACE may make it difficult to integrate other editors:** a) to integrate a new editor in MACE requires one to implement a module that provides conversion between keystroke commands and a canonical form understood by all editors [15] a task that we believe may prove difficult for sophisticated editors such as Emacs with a large number of keystroke commands; and (b) **MACE is based on a different model of user editor interaction than is found in single user editors.** It requires that a user explicitly lock the region to be ....

R.E. Newman-Wolfe and H. K. Pelimuhandiram. **MACE: A fine-grained concurrent editor.** In Proceedings of the ACM/IEEE Conference on Organizational Computing Systems (COCS 91), pages 240--254, Atlanta, Georgia, November 1991.

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Structured Cooperative Editing and Group Awareness - Decouchant, Quint, Salcedo (1995) (2 citations) (Correct)

....files produced by simple text editors such as emacs or vi and a more or less arbitrary structure of the shared document must be defined. **Some projects such as Quilt [4] 10] and CES [7] propose very limited and static shared entities (text sections) This drawback has been considered by Mace [13], which dynamically allows start and stop locks to be placed when defining a shared entity.** Despite this attempt, it only allows users to cooperate at the string level. **CES and Mj lner [11] define basic document structures (sections and textual units) and take advantage of these units to support ....**

R. E. Newman-Wolfe and Harsha K. Pelimuhandiram, **MACE: A Fine Grained Concurrent Editor** , Proceedings of the Conference on Organizational Computing Systems, pp. 240-254, ACM Press, November 1991.

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Undoing Actions in Collaborative Work: Framework and Experience - Prakash, Knister (1994) (1 citation) (Correct)

....may not be aware of all actions done by other users. **The** behavior of undo should be consistent with a user s awareness of actions done on the document. **Many** groupware applications have been built that support multi user work on a shared document, e. g, **Grove [9] ShrEdit[25] CES [18] and MACE [28].** Almost none, as far as we are aware, provide an undo facility that addresses all the above issues. **Those** applications that do provide an undo usually only provide a global undo facility rather than a per user undo facility. **MACE [28] does provide a simple form of per user undo facility, allowing ....**

....document, e.g, **Grove [9] ShrEdit[25] CES [18] and MACE [28]** Almost none, as far as we are aware, provide an undo facility that addresses all the above issues. **Those** applications that do provide an undo usually only provide a global undo facility rather than a per user undo facility. **MACE [28] does provide a simple form of per user undo facility, allowing a user to undo only those modifications that he made by explicitly locking modified sections of the document, and only if he hasn t released the locks since the modifications.** If the lock was released or if the modified section ....

R.E. Newman-Wolfe and H. K. Pelimuhandiram. **MACE: A fine-grained concurrent editor.** In Proceedings of the ACM/IEEE Conference on Organizational Computing Systems (COCS 91), pages 240--254, Atlanta, Georgia, November 1991.

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A Framework for Undoing Actions in Collaborative Systems - Prakash, Knister (1994) (19 citations) (Correct)

....undoing some of the other users changes. In this case, there are dependencies between the changes which need to be taken into account during an undo. Many groupware applications have been built that support multi user work on a shared document, e. g, Grove [9] ShrEdit[26] CES [17] and MACE [28]. None, as far as we are aware, provide an undo facility that addresses all the above issues. Those applications that do support undo usually only provide a global undo facility rather than a per user undo facility. MACE [28] does support a simple form of per user undo, allowing users to undo ....

....on a shared document, e.g, Grove [9] ShrEdit[26] CES [17] and MACE [28] None, as far as we are aware, provide an undo facility that addresses all the above issues. Those applications that do support undo usually only provide a global undo facility rather than a per user undo facility. MACE [28] does support a simple form of per user undo, allowing users to undo their own modifications made to a section provided they acquire a lock on the section prior to making modifications and do not release the lock prior to the undo. This paper presents a framework for implementing undo in groupware ....

R.E. Newman-Wolfe and H. K. Pelimuhandiram. *MACE: A fine-grained concurrent editor*. In Proceedings of the ACM/IEEE Conference on Organizational Computing Systems (COCS 91), pages 240--254, Atlanta, Georgia, November 1991.

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**Real Time Groupware as a Distributed System:  
Concurrency Control and its Effect on the  
Interface (1994) (Make Corrections) (74 citations)**  
Saul Greenberg, David Marwood  
Computer Supported Cooperative Work

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**Abstract:** This paper exposes the concurrency control problem in groupware when it is implemented as a distributed system. Traditional concurrency control methods cannot be applied directly to groupware because system interactions includes people as well as computers. Methods, such as locking, serialization, and their degree of optimism, are shown to have quite different impacts on the interface and how operations are displayed and perceived by group members. The paper considers both human and technical... ([Update](#))

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.... in CSCW literature that the centralized architecture and lock based mechanisms are generally not suited for supporting cooperation [19]. Coordination and communication among computing entities aim mainly at increasing the speed and performance, not the flexibility of...

.... Furthermore, several researchers have indicated that designing a undo solution for this type of systems is a challenging task [3, 10, 13]. This paper focuses on Any Undo in real time collaborative object graphics editing systems. This undo solution is based on GRACE...

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Greenberg, S. and Marwood, D. (1994). "Real-Time Groupware as a Distributed System: Concurrency Control and its Effect on the Interface", in Proc. ACM Conference on Computer-Supported Cooperative Work CSCW'94 (Chapel Hill, North Carolina), pp. 207--218. <http://citeseer.nj.nec.com/greenberg94real.html> [More](#)

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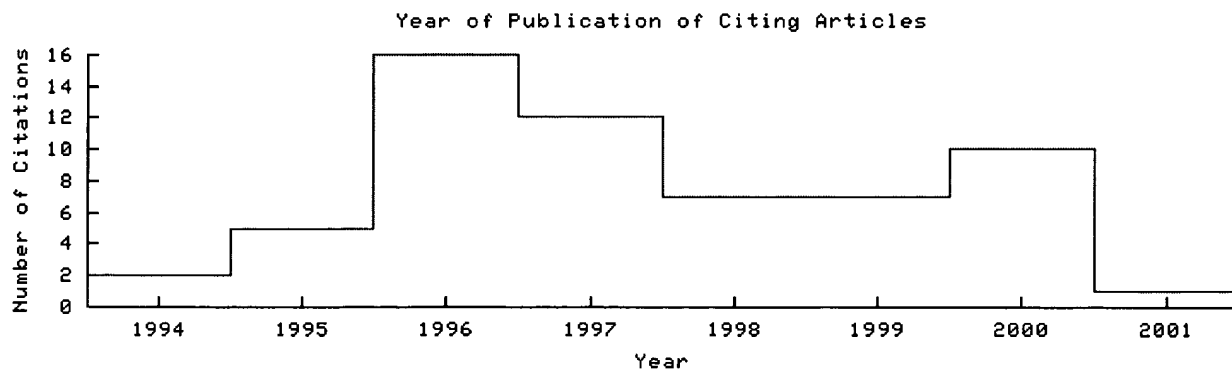
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